CLAIMS:

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- 1. A system for selective thermal treatment of skin irregularities comprising:
 - (i) one or more RF electrodes adapted to apply RF energy to the skin; and
 - (ii) a RF pulse generator configured to generate pulses of current in the RF range, the voltage pulses having a duration of 2-500ms.
- 2. The system according to Claim 1 wherein the pulse of the RF current consists of a train of shorter pulses.
- 3. The system according to Claim 1 further comprising a cooling unit adapted to cool the skin.
- 4. The system according to Claim 3 wherein the cooling unit comprises a thermoelectric cooler.
- 5. The system according to Claim 1 further comprising a impedance meter for measuring an impedance across one or more of the RF electrode pairs.
- 15 6. The system according to Claim 5 further comprising a processor configured to determine a heat distribution in the skin based upon one or more impedance measurements.
 - 7. The system according to Claim 6 wherein the processor is further configured to determine one or more parameters of the RF energy based upon one or more impedance measurements.
 - 8. The system according to Claim 7 wherein the one or more parameters are selected from the group comprising a pulse duration of the RF energy, a frequency of the RF energy, a power of the RF energy, and a delay time between cooling the skin an application of the RF energy.
- 25 9. The system according to Claim 1 further comprising input means for determining one or more parameters of the RF energy.
 - 10. The system according to Claim 9 wherein the one or more parameters are selected from the group comprising a pulse duration of the RF energy, a frequency

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of the RF energy, a power of the RF energy, a delay time between cooling the skin and application of the RF energy.

- 11. A method for selective thermal treatment of skin irregularities comprising:
 - (i) applying one or more RF electrodes to the skin; and
 - (ii) generating current pulses in the RF range, the pulses having a duration in the range of 2-500ms.
- 12. The method according to Claim 11 wherein the pulse of the RF current consists of a train of shorter pulses.
- 13. The method according to Claim 11 further comprising cooling the skin.
- 10 14. The method according to Claim 13 wherein cooling the skin involves cooling a fluid and allowing the fluid to flow near the skin.
 - 15. The method according to Claim 13 wherein cooling the skin comprises involves a thermoelectric cooler.
 - 16. The method according to Claim 11 further comprising measuring an impedance across one or more RF electrode pairs.
 - 17. The method according to Claim 16 further comprising determining a heat distribution in the skin based upon one or more impedance measurements.
 - 18. The method according to Claim 17 further comprising determining one or more parameters of the RF energy based upon one or more impedance measurements.
 - 19. The method according to Claim 18 wherein the one or more parameters are selected from the group comprising a pulse duration of the RF energy, a frequency of the RF energy, a power of the RF energy, a delay time between cooling the skin an application of the RF energy.
- 25 20. The method according to Claim 11 wherein a frequency of the RF energy is from about 300 kHz to about 100 MHz.
 - 21. The method according to Claim 11 wherein an output power of the RF energy is from about 5 to about 500 W.
- 22. The method according to Claim 11 wherein a pulse repetition rate is from about 0.1 to about 10 pulses per second.

- 23. The method according to Claim 11 further comprising hydrating the skin.
- 24. The method according to Claim 11 wherein the skin irregularity is selected from the group comprising a hair, a vascular or pigmented lesion and a collagen abnormality.

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